

A new genus of Melolonthinae from southern Africa (Coleoptera: Scarabaeidae)

by

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Scapanoclypeus **gen. nov.** is described and compared in a key to *Oedanomerus* Waterhouse and *Trichinopus* Waterhouse. *Trichinopus aberrans* Frey is designated as its type-species, resulting in the new combination of *S. aberrans* (Frey). Five additional species are described as new: *S. testaceus*, *S. cornutus*, *S. carinatus*, *S. aulacocoleatus*, *S. brunneus*. An illustrated key to the known species of the genus is presented.

INTRODUCTION

When describing *Trichinopus aberrans*, Frey (1974) noted that this species possesses characters of both *Oedanomerus* Waterhouse and *Trichinopus* Waterhouse, but placed it in the former genus based on its clypeal structure.

Recently, I had the opportunity to examine a number of melolonthines from southern Africa housed in the Transvaal Museum. This collection included several undescribed species allied to *T. aberrans*, but further examination revealed that, in fact, these were representatives of an undescribed genus.

The following abbreviations are used to denote the location of study material:

- AVEC – A. V. Evans, University of Pretoria.
- LACM – Natural History Museum of Los Angeles County, Los Angeles.
- NCI – National Collection of Insects, Pretoria.
- SMWN – State Museum, Windhoek.
- TM – Transvaal Museum, Pretoria.

Genus *Scapanoclypeus* **gen. nov.**

Type-species: *Trichinopus aberrans* Frey.

Etymology: *skapane* (Gr.) = shovel; and *clypeus* (L.) = shield, referring to the shape of the clypeus. The generic name is masculine in gender.

Diagnosis: 5,0–12,0 mm long; body cylindrical; antennae 9-segmented, club 3-segmented, strongly curved, four times the length of the pedicel; clypeus vertical with three basal projections; ocular and frontal carinae present; pygidium produced forward; visible abdominal sternites constricted and longitudinally carinate medially; protibiae tridentate, basal tooth reduced; metafemora globose; metatibiae triangular; first metatarsal segments longer than metatibial spurs; claws simple.

Description: head with labrum reduced, suture often obscure; mandibles simple, triangular; antennae as in Fig. 2; maxillae reduced, without teeth or projections, palps 4-segmented, first segment short, transverse, second segment elongate, cylindrical, third segment round, terminal segment long, tapering gradually to apex with longitudinal impression dorsally; labium reduced, palpi 1-segmented; clypeus as in Figs 7–12, the disc nearly horizontal, the lateral and anterior margins moderately to strongly reflexed; frons setigerously tuberculate; vertex impunctate. Pronotum wider than long; anterior angles obtuse, never produced; lateral margins rounded; anterolateral margins without bead; surface setose, convex, without projections or declivities. Elytra elongate, sometimes covering propygidium; setose; vaguely punctostriate. Metathoracic wings fully developed (Fig. 1). Pygidium strongly produced forward; triangular, longer than basal width, alutaceous with scattered erect setae. Abdomen with five visible sternites constricted and longitudinally carinate medially; sixth visible sternite separated from fifth by a membranous border and partially overlapped by the fifth visible sternite. Legs with protibiae tridentate, claws simple; metafemora globular; metatibiae triangular; first tarsal segments longer than short, broad subcontiguous apical spurs. Male genitalia symmetrical, parameres fused basally (Figs 13–24).

Oedanomerus and *Trichinopus* are the most similar to *Scapanoclypeus*. The former genus was recently revised Evans (in press) while *Trichinopus* is currently undergoing revisionary study (Evans, in prep.). All three of these genera may be distinguished from other southern African Melolonthinae by the following characters: small size (12.0 mm or less), reduced mouthparts, 8- to 10-segmented antennae, propygidium not fused with fifth visible sternite, and free abdominal segments. The three genera are distinguished from one another in the key below.

- 1 Pedicel attached to club subbasally; first metatarsal segment longer than apical metatibial spurs 2
- Pedicel attached to club basally; first metatarsal segment subequal in length to apical metatibial spurs *Oedanomerus* Waterhouse
- 2 Antennal club 6-segmented, twice as long as pedicel; clypeus horizontal, without projections; pygidium subvertical; protibiae tridentate; metafemora and metatibiae elongate; metacorbulae normal *Trichinopus* Waterhouse
- Antennal club 3-segmented, four times as long as pedicel; clypeus with basal projections; pygidium produced anteriorly; protibiae tridentate; metacorbulae raised, scabrous *Scapanoclypeus* gen. nov.

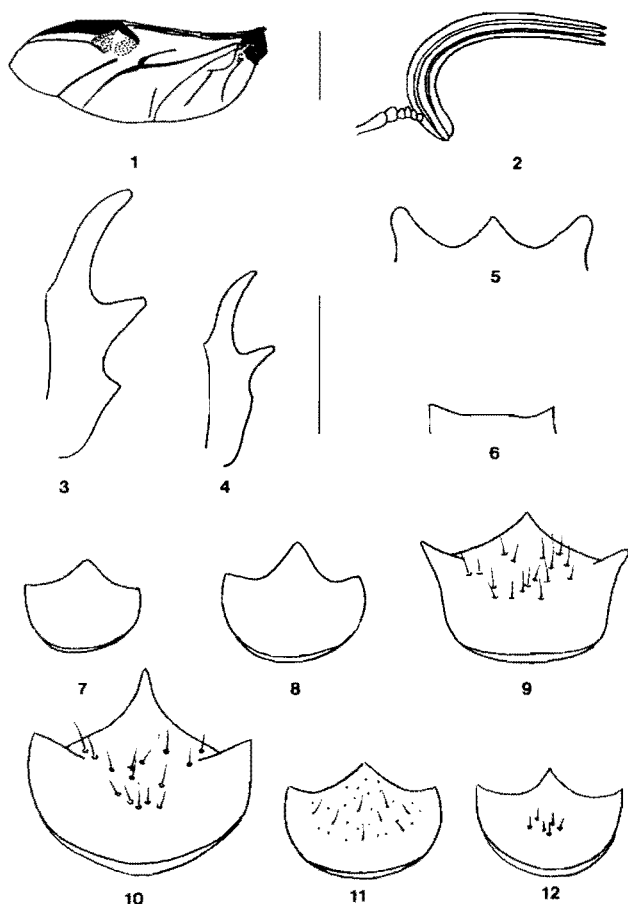
BIOLOGY

The immature stages of *Scapanoclypeus* are unknown. Adults have been taken at lights in sandy areas and are quick flyers. Gut content analysis in combination with reduced mouthparts indicate that the adults do not feed.

Key to the species of *Scapanoclypeus*

- 1 Protibiae appearing bidentate (Fig. 4); clypeus, when viewed from above, without projections (Fig. 6); clypeus impunctate 2
- Protibiae tridentate (Fig. 3); clypeus, when viewed from above, with at least two distinct projections (Fig. 5); clypeus setigerously punctate 3
- 2 Clypeus testaceous, shining *S. testaceus* sp. nov.
- Clypeus piceous, dull, alutaceous *S. aberrans* (Frey)
- 3 Clypeus, when viewed anteriorly, without divergent projections (Figs 7, 8, 10, 12) 4
- Clypeus, when viewed anteriorly, with divergent projections (Fig. 9) *S. cornutus* sp. nov.

- 4 Medial clypeal projection broadly acuminate (Figs 11, 12), without a frontal longitudinal carina 5
 — Medial clypeal projection narrowly acuminate (Fig. 10), connected with transverse frontal carina by a longitudinal carina *S. carinatus* sp. nov.
 5 Clypeus moderately setigerously punctate (Fig. 11); head piceous, pronotum and elytra fulvous; male genitalia with parameres showing basal line of fusion (Fig. 21); 7.5–9.0 mm long *S. aulacocoleatus* sp. nov.
 — Clypeus sparsely setigerously punctate (Fig. 12); head and pronotum dark, elytra fulvous; male genitalia without line of fusion (Fig. 23); 6.5–8.0 mm long *S. brunneus* sp. nov.



Figs 1–12. *Scapanoclypeus* spp. 1. Metathoracic wing. 2. Antenna. 3. Tridentate protibia. 4. Bidentate protibia. 5–6. dorsal aspect of clypeal projections. 7–12. Anterior aspect of clypeus: 7. *S. testaceus* sp. nov. 8. *S. aberrans* (Frey). 9. *S. cornutus* sp. nov. 10. *S. carinatus* sp. nov. 11. *S. aulacocoleatus* sp. nov. 12. *S. brunneus* sp. nov. (scale bars = 1 mm).

***Scapanoclypeus testaceus* sp. nov.**, Figs 7, 13, 14

Diagnosis: 5.0–7.0 mm long; clypeus impunctate (Fig. 7), glabrous, shining; clypeus, pronotum, elytra testaceous; frons and vertex castaneous; protibiae tridentate, with basal tooth broadly angulate, appearing bidentate.

Description: Head with mouthparts and antennae testaceous; clypeus with basal projections broadly acuminate; frons with setae suberect; ocular and frontal carinae weakly developed. Pronotum with surface alutaceous with setigerous tubercles, setae flavous, recumbent. Elytra with lateral and apical margins darker than disc; disc shallowly, confusedly, setigerously punctate, setae flavous, recumbent. Pygidium testaceous. Male genitalia as in Figs 13 and 14.

MATERIAL EXAMINED: Holotype male: Mata Mata, Kalahari-Gemsbok Park, x.1957, C. Koch (TM). 10 paratypes (AVEC, NCI, TM): SOUTH AFRICA: CAPE PROVINCE: 3 paratypes, same data as holotype; 3 paratypes, Auob-Nossob Junct., iv.1933, G. van Son; 1 paratype 90 km N. Sutherland, Namakwaland, 11.xii.1971, E. Holm; 1 paratype, Twee Rivieren, SE 26,20 Bc, 6.i.1980; 1 paratype, Twee Rivieren, v.1956, Kalahari Gemsbok Park Expedition; 1 paratype, Kalahari-Gemsbok Park, 18.xii.1970, B. H. Veenemans.

***Scapanoclypeus aberrans* (Frey) comb. nov.**, Figs 8, 15, 16

***Trichinopus aberrans* Frey, 1974: 342.**

Type: Holotype male, Kowas, S.W. Afrika, Frey Museum (not examined).

Diagnosis: 5.0–8.0 mm long; clypeus impunctate, glabrous (Fig. 8), dull, alutaceous; frons and vertex piceous; pronotum piceous or dark castaneous; elytra brunneous; protibiae tridentate, with basal tooth weakly developed, broadly angulate, appearing bidentate.

Description: Head with mouthparts and antennae fulvous; basal projections broadly acuminate; frons with setae flavous, suberect; ocular and frontal carinae weakly developed. Pronotum with lateral margins broadly angulate; antero- and posterolateral margins straight; disc impunctate medially, remaining areas shining with scattered setigerous punctures. Elytra with humeral, lateral, and apical margins darker than disc; disc vaguely, setigerously punctostriate, setae recumbent. Pygidium brunneous. Male genitalia as in Figs 15 and 16.

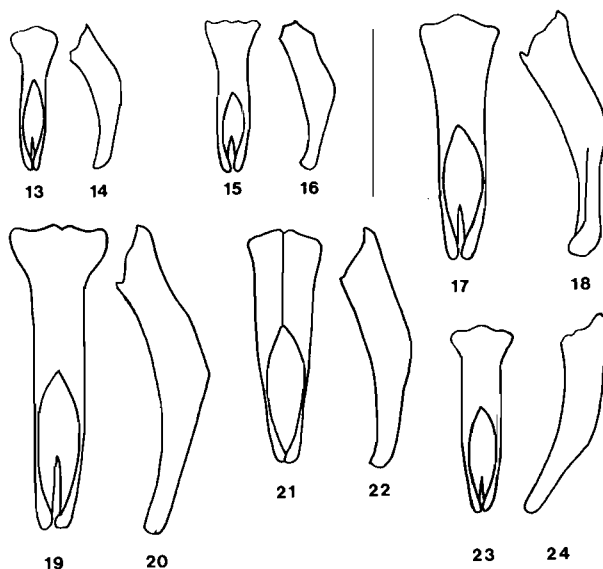
MATERIAL EXAMINED: 25 (AVEC, NCI, SMWN, TM). SWA/NAMIBIA: Duineveld, nr. Stampreit; Wildhelm Ost 384, SE 26.19 Bc, Keetmanshoop; Kowas (paratype). SOUTH AFRICA: CAPE PROVINCE: Twee Rivieren, SE 26.20 Bc; Mata Mata.

Months collected: November, January, February, April, June, July.

Remarks: Aside from the colour and clypeal characters mentioned above, *S. aberrans* may be distinguished from *S. testaceus* by the basal projections being virtually planar and the basal tooth of the protibiae almost indistinct.

***Scapanoclypeus cornutus* sp. nov.**, Figs 9, 17, 18

Diagnosis: 9.0–12.0 mm long; clypeus castaneous, setigerously punctate, lateral projections divergent when viewed anteriorly (Fig. 9); frons and vertex piceous; pronotum castaneous; elytra fulvous; protibiae tridentate.



Figs 13–24. *Scapanoclypeus* spp., male parameres, frontal and lateral aspects. 13–14. *S. testaceus* **sp. nov.** 15–16. *S. aberrans* (Frey). 17–18. *S. cornutus* **sp. nov.** 19–20. *S. carinatus* **sp. nov.** 21–22. *S. aulacocoleatus* **sp. nov.** 23–24. *S. brunneus* **sp. nov.** (scale bar = 1 mm.)

Description: Head with mouthparts and antennae fuscous; clypeal margins piceous; basal clypeal projections acuminate; ocular and frontal carinae well developed, contiguous. Pronotum with antero- and posterolateral margins straight; setae short, fine, recumbent. Elytra with disc vaguely, setigerously punctostriate, setae white, recumbent. Pygidium fulvous. Male genitalia as in Figs 17 and 18.

MATERIAL EXAMINED: Holotype male: SWA, 40 km ex Stampriet [to] Gochas, SE 24.18 Ba, 25.i.1981 (TM). 6 paratypes: same data as holotype (AVEC, TM).

***Scapanoclypeus carinatus* sp. nov.**, Figs 10, 19, 20

Diagnosis: 12.0 mm long; clypeus setigerously punctate below acuminate medial projection (Fig. 10); frons with a medial longitudinal carina connecting medial projection and transverse frontal carina; lateral projections not divergent when viewed anteriorly; frons and vertex piceous; pronotum castaneous; elytra fulvous; protibiae tridentate.

Description: Head with mouthparts fulvoustennae testaceous; frons scabrously, setigerously punctate; ocular and frontal carinae well developed, contiguous. Pronotum with antero- and posterolateral margins straight; surface alutaceous with scattered setigerous tubercles; setae flattened, whitish, appressed. Elytra with disc vaguely, setigerously punctostriate with two narrow impunctate, glabrous bands between the suture and humerus; setae flattened, whitish, appressed. Pygidium fulvous. Male genitalia as in Figs. 19 and 20.

MATERIAL EXAMINED: Holotype male, Daberos 15 m. NW Annisfontein, Richtersveld, C.P. S. Afr., 12.ix.1969, A. D. Brown (TM).

***Scapanoclypeus aulacocoleatus* sp. nov.**, Figs 11, 21, 22, 25

Diagnosis: 7,5–9,0 mm long; clypeus fulvous, setigerously punctate below broadly acuminate medial projection (Fig. 11); lateral projections not divergent when viewed anteriorly; frons and vertex piceous; pronotum and elytra fulvous; protibiae tridentate.

Description: Head with mouthparts and antennae testaceous; frons alutaceous with setigerous tubercles, setae suberect; ocular and frontal carinae weakly developed. Pronotum with lateral margins rounded; disc impunctate medially, remaining surface with scattered setigerous tubercles; setae pale, recumbent. Elytra with humeral, lateral, and apical areas darker than disc; disc vaguely, setigerously punctostriate, setae pale, recumbent. Pygidium testaceous. Male genitalia as in Figs 21 and 22.

MATERIAL EXAMINED: Holotype male: Mata Mata, Kalahari-Gemsbok Park, 16.ii.1961, L. Vari (TM). 23 paratypes (AVEC, LACM, SMWN, TM): SWA/NAMIBIA: 1 paratype, Stampried, SE 24.18 Ad, Marienthal, 14/15.iv.1977, S. Louw, M.-L. Penrith, H34288; 1 paratype Duinveld, Elephants Riv. Kalah., 21/24.ii.1957, Transv. Mus. Exped.; Keetmans. Dist., 1 km W Mata Mata, Welverdiend Farm No. 328, 25.47 S 19.59 E, 18.x.1972, C. L. Hogue; 2 paratypes, Wildheim Ost 384, SE 2619 Bc, Keetmanshoop, 23/29.x.1976, S. Louw, M.-L. Penrith, H33562. SOUTH AFRICA; CAPE: 1 paratype, same data as holotype; 4 paratypes, Mata Mata, S. Kalahari, ix–1957, C. Koch; 1 paratype, Mata Mata, SE 25.20 Cc, 7.i.1980, Univ. v. Pretoria; 11 paratypes, Kalahari Park, Mata Mata 25.45 S–20.00 E, 18.xii.1974, E-Y: 512, light collection, leg. Endrödy-Younga; 1 paratype, Kalahari-Gemsbok Pk., Mata Mata, 25.49 S–20.1 E, 27.i.1986, A. V. Evans, C. H. Scholtz.

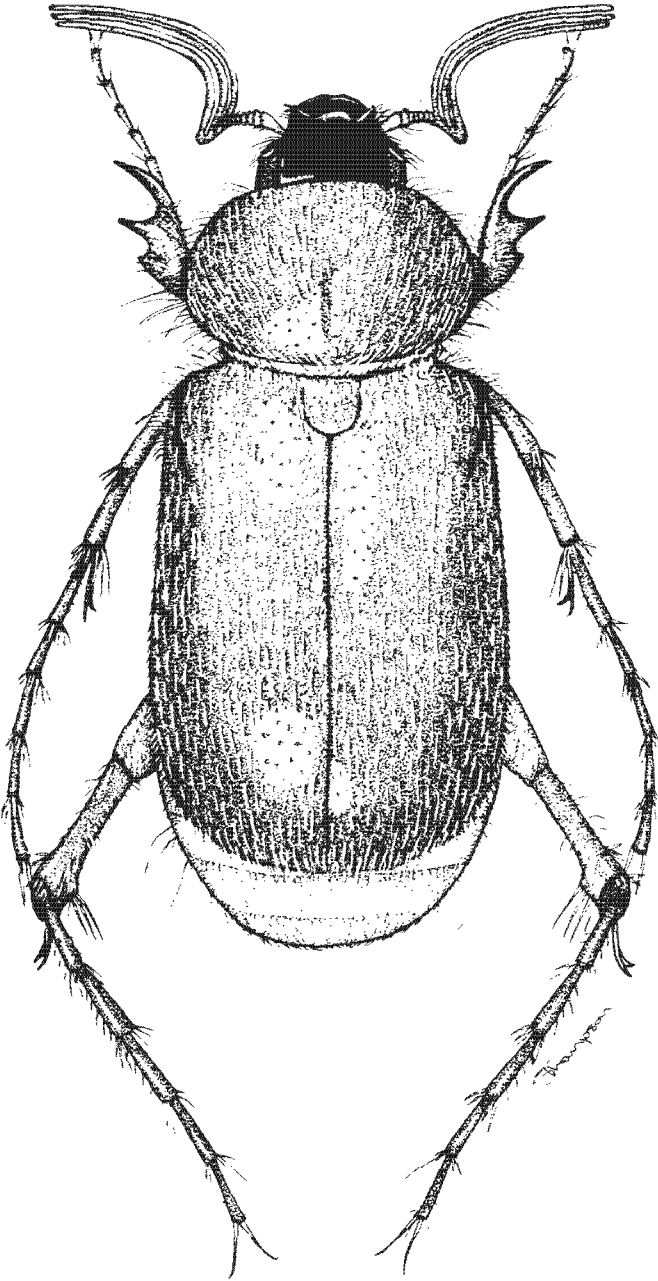
***Scapanoclypeus brunneus* sp. nov.**, Figs 12, 23, 24

Diagnosis: 6,6–8,0 mm long; clypeus piceous, sparsely setigerously punctate below acuminate medial projection (Fig. 12); lateral projections not divergent when viewed laterally; frons and vertex piceous; pronotum rufobrunneus; elytra pale brunneus; protibiae tridentate.

Description: Head with mouthparts and antennae fulvous; frons with setae suberect; ocular and frontal carinae weakly developed, contiguous. Pronotum with lateral margins rounded; surface alutaceous; setae pale, recumbent. Elytra with humeral, lateral, and apical margins darker than disc; disc vaguely, setigerously punctostriate; setae flattened, pale, recumbent. Pygidium pale brunneus. Male genitalia as in Figs 23 and 24.

MATERIAL EXAMINED: Holotype male: Windhoek, Farm Oijisew., H. Kinya (TM). 5 paratypes, same data as holotype (AVEC, TM).

Fig. 25. *Scapanoclypeus aulacocoleatus* sp. nov., dorsal habitus. Actual length = 9,0 mm.



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